

## MEDICAL CONTROL GUIDELINE: INTRAOSSEOUS ACCESS

### PRINCIPLES:

1. Intraosseous (IO) access is indicated for adult and pediatric patients in cardiopulmonary arrest when intravenous (IV) access is not possible, unlikely to be successful, or cannot be achieved quickly.
2. IO access is approved under the local optional scope of practice for paramedics who have completed specialized training and are employed by an approved IO provider. All IO training materials and quality improvement review must be approved by the EMS Agency prior to implementation.
3. IO contraindications:
  - a. Inability to identify landmarks
  - b. Lower extremity deformity/fracture
  - c. Failed IO attempt in the same bone
4. Possible IO complications:
  - a. Compartment syndrome
  - b. Growth plate injury
  - c. Skin or bone infection
  - d. Fracture of the involved bone
  - e. Fat embolism
  - f. Local infiltration of fluid

### GUIDELINES:

1. IO needle placement is approved for the flat surface of the non-traumatized proximal medial tibia, utilizing the tibial tuberosity as the landmark for proper placement. Preferred IO site is free from signs of skin or bone infection.
2. Explain IO procedure to the family or caregiver if present during the resuscitation.
3. Prior to use, verify patency by attempting to aspirate blood or a small amount of bone marrow, and then slowly flush with normal saline. The IO site can be used if it flushes easily without signs of swelling.
4. If swelling occurs or if IO needle becomes dislodged, stop infusion, remove IO needle, and apply pressure bandage to the IO site.
5. IO placement may be attempted once per tibia.
6. Document the IO needle gauge and site when IO access is attempted and/or achieved.
7. Providers approved to utilize IO for conditions other than cardiopulmonary arrest should utilize lidocaine for patients responsive to pain. Pre-infuse lidocaine 2% (preservative and epinephrine free) at the dosage listed below. Slow infusion is necessary to ensure the lidocaine remains in the medullary space
  - a. Adults: 40mg slow push over 1-2 minutes
  - b. Pediatric: 0.5mg/kg, maximum dose 40mg, slow IO push over 1-2 minutes